Synthesis of 1,1-Diphenylcyclopropane Derivatives

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22. Synthesis of 1, 1-Diphenylcyclopropane Derivatives

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Several compounds having cyclopropane ring were synthesized in order to test their insecticidal activities. When benzophenone was added to the ethereal solution of methylmagnesium iodide, diphenylmethylcarbinol was obtained. This carbinol was changed to 1.1-diphenylethylene by the dehydroxylation. When ethyldiazoacetate was added to the diphenylethylene in the presence of copper catalyst, ethyl ester of 2,2-diphenylcyclopropanecarboxylic acid was obtained. By the hydrolysis of this ester the free acid was obtained. On the other hand, ethereal solution of diazomethane was added to the 1.1-diphenylethylene and the resulting solution was stored for two weeks and then the crystals of 5,5-diphenylpyrazoline were separated by the removal of ether. This compound was decomposed to 1.1-diphenylcyclopropane by heat. The respective compounds of 1,1-bis (p-chlorophelnyl)- and 1,1-bis (p-bromphenyl)-cyclopropane series were also synthesized by the same way.

Melting and boiling points of these synthesized compounds were as follows:

	(no substitution)	p,p-dichloro derivatives	p,p-dibromo derivatives
1,1-diphenylmethylcarbinol	mp.78—80°	mp. 68—9°	mp. 85°
1,1-diphenylethylene	bp. 135°/mm	mp. 86—8°	mp. 85—6°
ethyl 2,2-diphenylcyclopropanecarboxylate	bp. 183—5°/5mm	bp. 205—8°/5mm	—
2,2-diphenylclopropanecarboxylic acid	mp. 169—70°	mp. 170.5—71°	mp. 195—5.5°
5,5-diphenylpyrazoline	mp. 64.5—5.5°	mp. 90.5—1.5°	mp. ca. 100° (decomp.)
1,1-diphenylcyclopropane	bp. 122—3°/5mm	bp. 165-68°/4.5mm mp. 103.5—4°	mp. 132.5—3°

The results of insecticidal tests of these compounds will be reported another day.

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23. Distillation of Rice Oil Fatty Acid

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In the distillation of rice oil fatty acid, at about 1 mm. Hg pressure and 200-230°C temperature, we can increase the yield of distilled fatty acid by diminishing the polymerization degree of unsaturated fatty acid, being heated at higher temperature for a long time. In order to explain this matter, we compared distillation